Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Air Force										DATE: February 2012	
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*				R-1 ITEM NOMENCLATURE PE 0401119F: *C-5 Airlift Squadrons*							
COST ($ in Millions)	**FY 2011**	**FY 2012**	**FY 2013 Base**	**FY 2013 OCO**	**FY 2013 Total**	**FY 2014**	**FY 2015**	**FY 2016**	**FY 2017**	**Cost To Complete**	**Total Cost**
Total Program Element	55.071	12.941	35.115	-	35.115	82.892	24.267	-	-	Continuing	Continuing
674495: *Avionics Modernization Program*	0.100	-	-	-	-	-	-	-	-	Continuing	Continuing
674835: *Reliability Enhancement & Reengining Program*	35.601	12.941	-	-	-	-	-	-	-	Continuing	Continuing
675353: *C-5 Block Upgrade*	19.370	-	-	-	-	-	-	-	-	Continuing	Continuing
675358: *C-5 MISSION COMPUTER-MISSION SYS EQUIP-WEATHE*	-	-	35.115	-	35.115	82.892	24.267	-	-	Continuing	Continuing

Note

"The Cost to Complete and Total Cost for MDAP projects in this program element are documented in the R3. The Cost to Complete and Total Cost on the R2 are entered as "Continuing" and not reflective of the total cost for MDAP projects since the R2 does not account for prior years funding."

A. Mission Description and Budget Item Justification

This program is in Budget Activity 7, Operational Systems Development because this budget activity includes development efforts to upgrade systems that have been fielded or have received approval for full rate production and anticipate production funding in the current or subsequent fiscal year.

In FY11, Project Number 674495, Avionics Modernization Program (AMP) was completed.

In FY11, Project Number 675353, C-5 Block Upgrade was completed.

In FY12, Project Number 674835, C-5 Reliability Enhancement and Re-engining Program (RERP) was completed.

675358: C-5 Core Mission Computer (CMC) and Weather Radar Programs: Mission computer and weather radar replacement is a comprehensive effort to mitigate the obsolence of the current CMC and weather radar. This effort centers around replacing the current mission computer to obtain sufficient capability to support integration of new system capabilities with margin for growth. Also, the effort includes replacement of the weather radar with a commercial off-the-shelf color weather radar. The new mission computer will allow for current and future throughput growth of additional processing requirements to meet CY 2020 CNS/ATM mandates.

In FY 2013, the C-5 Mission Computer and Weather Radar research, development, test, and evaluation is a new start effort.

Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Air Force	DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0401119F: *C-5 Airlift Squadrons*

FY 2013: Funding supports mission computer design, development, weather radar integration, engineering change orders, and contractor test. Mission support funding is required for program office operations.

B. Program Change Summary ($ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
Previous President's Budget	58.990	24.941	-	-	-
Current President's Budget	55.071	12.941	35.115	-	35.115
Total Adjustments	-3.919	-12.000	35.115	-	35.115
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-12.000			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-3.618	-			
• Other Adjustments	-0.301	-	35.115	-	35.115

Change Summary Explanation

FY11: Budget adjustments are a result of SBIR (-$3.618M) and a Congressional General Reduction (-$0.301M), which is loaded in the Other Adjustments row.

FY12: $12.0M of C-5 RERP funds were reduced by Congress due to a rephase of the program.

FY13: New start funding for C-5 mission computer, mission systems equipment, and weather radar capability.

Exhibit R-2A, RDT&E Project Justification: PB 2013 Air Force			DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0401119F: *C-5 Airlift Squadrons*	PROJECT 674495: *Avionics Modernization Program*	

COST ($ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
674495: *Avionics Modernization Program*	0.100	-	-	-	-	-	-	-	-	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

Avionics Modernization Program (AMP): AMP implements communication, navigation, surveillance/air traffic management (CNS/ATM), navigation/safety capability and the all weather flight control system (AWFCS). It installs directed navigation/safety equipment: terrain awareness and warning system (TAWS) and traffic alert and collision avoidance system (TCAS), reducing the threat of controlled flight into terrain and mid-air collisions. CNS/ATM capability requirements are incorporated in the aircraft to meet current and future International Civil Aviation Organization (ICAO)/Federal Aviation Administration (FAA) requirements and to progress toward next generation air transportation system. AWFCS replaces low reliability line replaceable units (LRUs) in the automatic flight control system and replaces aging, non-supportable mechanical instruments in the engine and flight systems. Connectivity to mobility command and control capabilities is also incorporated in the AMP design. The portion of avionics capability required for modernization that does not complete at the end of AMP development will be captured and funded in follow-on development programs. AMP requirements have been expanded to incorporate updates to the new avionics architecture, to include security enhancements to the global positioning system. Equipment diminishing manufacturing source (DMS) issues will be resolved to support continued operations through studies, development, and redesign efforts.

In FY2011, Project Number 674495, Avionics Modernization Program, research development, test, and evaluation was completed.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2011	FY 2012	FY 2013
Title: Pilot Assist Cable System (PACS) SERVO	0.100	-	-
Description: Redesign, development, and testing of brushless PACS Servo to increase Mean Time Between Repairs. ***FY 2011 Accomplishments:*** Redesign, development, and testing of brushless PACS Servo to increase Mean Time Between Repairs. ***FY 2012 Plans:*** N/A			
Accomplishments/Planned Programs Subtotals	0.100	-	-

Exhibit R-2A, RDT&E Project Justification: PB 2013 Air Force		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0401119F: *C-5 Airlift Squadrons*	PROJECT 674495: *Avionics Modernization Program*

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
• APAF, PE 0401119F, Modifications: *C-5 Avionics Modernization Program (AMP)*	33.459	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	721.949
• APAF, PE 0401119F, Other Product...: *C-5 AMP*	1.462	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	37.339

D. Acquisition Strategy

Avionics Modernization Program: Program acquisition strategy established a single integrating contractor (Lockheed Martin Aeronautics Company) to modify and qualify integrated commercial off-the-shelf line replaceable units and software to meet C-5 communication, navigation, surveillance/air traffic management requirements; update existing engineering and technical data; develop interface control specifications based on requirements; prototype the new system; and support flight testing. The AMP modification was planned for the C-5 fleet, however, only 80 aircraft were modified due to C-5A retirements.

E. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

Exhibit R-4, RDT&E Schedule Profile: PB 2013 Air Force		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	**R-1 ITEM NOMENCLATURE** PE 0401119F: *C-5 Airlift Squadrons*	**PROJECT** 674495: *Avionics Modernization Program*

Exhibit R-4A, RDT&E Schedule Details: PB 2013 Air Force		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0401119F: *C-5 Airlift Squadrons*	PROJECT 674495: *Avionics Modernization Program*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
Kit Installation Completes	2	2012	2	2012
Full Operational Capability	3	2012	3	2012

Exhibit R-2A, RDT&E Project Justification: PB 2013 Air Force			DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0401119F: *C-5 Airlift Squadrons*	PROJECT 674835: *Reliability Enhancement & Reengining Program*	

COST ($ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
674835: *Reliability Enhancement & Reengining Program*	35.601	12.941	-	-	-	-	-	-	-	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

C-5 Reliability Enhancement and Re-engining Program (RERP)is a comprehensive modernization effort to improve aircraft reliability, maintainability, and availability. This effort centers around replacing the current TF39 engines with more reliable, commercial off-the-shelf CF6 turbofan engines. The RERP modification increases payload capability and access to communications, navigation, surveillance/air traffic management (CNS/ATM) airspace through core mission computer (CMC), radar, and other Air Force (AF) bolt-ons like mode 5 identification, friend or foe (IFF), aircraft communication addressing and reporting system (ACARS), malfunction analysis detection and recording system (MADARS), embedded diagnostic system (EDS), etc. The modification also decreases aircraft time to climb, increases engine-out climb gradient for takeoff, improves transportation system throughput, and decreases engine removals. On 7 Oct 10, USD AT&L conducted a successful full rate production (FRP) Defense Acquisition Board (DAB) and approved the C-5 RERP FRP acquisition decision memorandum for lots 5 – 7; directed the Air Force to fully fund RERP to the OSD cost assessment and program evaluation (CAPE) ICE for RDT&E; and re-designated C-5 RERP as an acquisition category IC program.

FY2011: Funding supports RERP design, development, engineering change orders, contractor/government test, and technical order publications. Mission support funding is required for program office operations. FY11 funding is also required to design, build, test and initiate delivery of aircrew/maintenance training devices.

FY2012: Funding supports RERP design, development, engineering change orders, contractor/government test, and technical order publication in support of the correction of qualification operational test & evaluation deficiency reports through software updates. Mission support funding is required for program office operations. Funding is also required to finalize the testing, development, and delivery of aircrew/maintenance training devices; complete technical publications; thrust reverser; and efforts to continue to minimize divergence between AMP and RERP baselines. The new engines increased payload capability and access to CNS/ATM airspace through core mission computer (CMC), radar, and other Air Force (AF) requirements, such as mode 5 identification, friend or foe (IFF), aircraft communication addressing and reporting system (ACARS), malfunction analysis detection and recording system (MADARS), etc.

In FY 2012, Project Number 674835, Reliability Enhancement and Re-engining Program research, development, test, and evaluation will be completed.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2011	FY 2012	FY 2013
Title: Reliability Enhancement & Re-engining Program	35.601	12.941	-
Description: Reliability Enhancement and Re-engining Program (RERP) will enable the C-5 to achieve wartime mission requirements by increasing fleet availability (mission capable rate, departure reliability).			
FY 2011 Accomplishments:			

Exhibit R-2A, RDT&E Project Justification: PB 2013 Air Force		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0401119F: *C-5 Airlift Squadrons*	PROJECT 674835: *Reliability Enhancement & Reengining Program*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2011	FY 2012	FY 2013
The accomplishments/planned program funding are to support RERP design, development, engineering change orders, contractor/government test, technical order publications, and design, build, test and deliver the aircrew/maintenance training devices. Mission support funding is also required for program office operations. ***FY 2012 Plans:*** Program funding supports final RERP design, development, engineering change orders, contractor/government test, technical order publications, resulting resulting from Qualification Operational Testing & Evaluation deficiency report corrections and to finalize the development/delivery of aircrew and maintenance training devices and efforts to minimize divergence between AMP and RERP baselines. Mission support funding is also required for program office operations. N/A			
Accomplishments/Planned Programs Subtotals	35.601	12.941	-

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
• APAF, PE 0401119F, Advance Procu...: *C-5 Reliability Enhancement and Re-engining Program*	166.900	112.200	175.800	0.000	175.800	0.000	0.000	0.000	0.000	0.000	454.900
• APAF, PE 0401119F, Modifications: *C-5 Reliability Enhancement and Re-engining Program*	672.717	851.859	944.819	0.000	944.819	1,017.967	338.927	0.000	0.000	0.000	3,826.289
• APAF, PE 0401119F, Initial Spares: *C-5 Reliability Enhancement and Re-engining Program*	0.000	116.175	117.186	0.000	117.186	131.933	0.000	0.000	0.000	Continuing	Continuing
• APAF, PE 0401119F, Other Production: *C-5 Reliability*	28.985	9.389	1.000	0.000	1.000	5.400	3.600	0.000	0.000	0.000	48.374

Exhibit R-2A, RDT&E Project Justification: PB 2013 Air Force		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0401119F: *C-5 Airlift Squadrons*	PROJECT 674835: *Reliability Enhancement & Reengining Program*

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
Enhancement and Re-engining Program											

D. Acquisition Strategy

Reliability Enhancement and Re-engining Program (RERP): System development & demonstration (SDD) included 1 C-5A and 2 C-5Bs. The acquisition strategy considered every opportunity to use commercial components to modernize the C-5 to meet or exceed required system performance and support, so as to renew the weapon system until 2040. Lockheed Martin was selected as the prime contractor through a sole source arrangement. Lockheed selected General Electric (Powerplant), Goodrich (Pylon), and Honeywell (Avionics) as the major subcontractors.

E. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

Exhibit R-4, RDT&E Schedule Profile: PB 2013 Air Force		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0401119F: *C-5 Airlift Squadrons*	PROJECT 674835: *Reliability Enhancement & Reengining Program*

Exhibit R-4A, RDT&E Schedule Details: PB 2013 Air Force		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	**R-1 ITEM NOMENCLATURE** PE 0401119F: *C-5 Airlift Squadrons*	**PROJECT** 674835: *Reliability Enhancement & Reengining Program*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
Training System Development	1	2011	3	2012
Annual Production Contract Awards	1	2011	1	2015

Exhibit R-2A, RDT&E Project Justification: PB 2013 Air Force			DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0401119F: *C-5 Airlift Squadrons*	PROJECT 675353: *C-5 Block Upgrade*	

COST ($ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
675353: *C-5 Block Upgrade*	19.370	-	-	-	-	-	-	-	-	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

C-5 Block Upgrade: Purpose of this program is to provide a measured approach to implement a common baseline for the C-5 fleet in order to allow insertion and integration of new/future capabilities and replacement of future unsupportable equipment. Software (S/W) and hardware (H/W) baselines between the avionics modernization program (AMP) and reliability enhancement and re-engining program (RERP) have diverged. S/W deficiencies corrected under AMP sustainment (block cycle changes) reappear in RERP. The AMP system has a total of two core processor module (CPM) cards; the RERP system has a total of three CPM cards. Originally, AMP was to have 50% spare processing and memory capability; currently, AMP CPMs have only 5% throughput capability remaining, which create safety concerns. AMP throughput/capacity constraint does not allow room for any new/future capability and contributes to current computer problems. Failure to upgrade the AMP core processing platform to the three CPM RERP configuration will affect mission capable rates, will inhibit the ability to fix current deficiency reports (DRs) and drive increased sustainment costs associated with S/W and H/W baseline divergence. The C-5 AMP core processing platform development will complete in FY12.

This program is in Budget Activity 7, Operational System Development because this budget activity includes development efforts to upgrade systems that have been fielded or have received approval for full rate production and anticipate production funding in the current or subsequent fiscal year.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2011	FY 2012	FY 2013
Title: C-5 Core Processing Platform & Software Commonality	19.370	-	-
Description: Upgrade the AMP core processing platform [versatile integrated avionics (VIA) and avionics interface unit (AIU)] to the RERP core processing platform configuration and address key AMP waivers and recurring critical AMP DRs in RERP software. ***FY 2011 Accomplishments:*** Complete software development and integration, regression testing, ground testing, development, test, & evaluation and operational, test, & evaluation. ***FY 2012 Plans:*** N/A			
Accomplishments/Planned Programs Subtotals	19.370	-	-

Exhibit R-2A, RDT&E Project Justification: PB 2013 Air Force		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0401119F: *C-5 Airlift Squadrons*	PROJECT 675353: *C-5 Block Upgrade*

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
• APAF, PE 0401119F, C-5 modificat...: *Block Upgrade Program*	0.000	7.600	6.000	0.000	6.000	0.000	0.000	0.000	0.000	0.000	13.600

D. Acquisition Strategy

Program acquisition strategy established a single integrating contractor (Lockheed Martin) to integrate & qualify the C-5 RERP core processing platform using the C-5 AMP operational flight program (OFP) in the C-5 AMP aircraft and incorporate software solutions developed for AMP into the RERP software baseline. Block Upgrade 01 is the start of a measured approach in implementing a more common baseline to allow insertion and integration of newly acquired/required capabilities and replacement of future unsupportable equipment due to obsolescence or diminishing manufacturing source (DMS) issues.

E. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

Exhibit R-4, RDT&E Schedule Profile: PB 2013 Air Force		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0401119F: *C-5 Airlift Squadrons*	PROJECT 675353: *C-5 Block Upgrade*

Exhibit R-4A, RDT&E Schedule Details: PB 2013 Air Force		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	**R-1 ITEM NOMENCLATURE** PE 0401119F: *C-5 Airlift Squadrons*	**PROJECT** 675353: *C-5 Block Upgrade*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
System Development and Demonstration (S/W development and test)	1	2011	3	2013
Test Readiness Review (TRR)	4	2012	4	2012
Formal Qualification Test (FQT)	1	2013	1	2013
Functional/Physical Configuration Audit	1	2013	1	2013
Integrated DT/OT&E	2	2013	3	2013
Flight Test Report and Airworthiness Certification	3	2013	3	2013

Exhibit R-2A, RDT&E Project Justification: PB 2013 Air Force			DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0401119F: *C-5 Airlift Squadrons*	PROJECT 675358: *C-5 MISSION COMPUTER-MISSION SYS EQUIP-WEATHE*	

COST ($ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
675358: *C-5 MISSION COMPUTER-MISSION SYS EQUIP-WEATHE*	-	-	35.115	-	35.115	82.892	24.267	-	-	Continuing	Continuing
Quantity of RDT&E Articles	0	0	1	0	1	2	0	0	0		

A. Mission Description and Budget Item Justification

C-5 Core Mission Computer (CMC), Weather Radar, and Mission Systems Equipment Program: Program is a comprehensive effort to mitigate the obsolesence of the current CMC and weather radar. This effort centers around replacing the current mission computer to obtain sufficient capacity/capability to support integration of new system capabilities with margin for growth. Also, the effort includes replacement of the weather radar with a commercial off-the-shelf color weather radar. Mission systems equipment includes, but is not limited to, a redesign of the C-5 galley system. Examples of other mission systems equipment include troop seats, crew entry door and ladder, and interior trim.

The current C-5 CMC has reached maximum capacity and cannot integrate required aircraft systems and capabilities to include the weather radar; flight management system (FMS); and communication, navigation, surveillance (CNS)/air traffic management (ATM) requirements. These requirements include capabilities such as the, automatic dependent surveillance-broadcast out (ADS-B Out), and identification, friend or foe (IFF) mode 5. The new CMC will allow for current and future throughput growth of additional processing requirements to meet CY 2020 CNS/ATM mandates.

The modification increases aircraft availability as the new color weather radar replaces the current APS-133 weather radar system, which becomes unsupportable in FY 2014. Failure to replace the CMC to support a new weather radar will create a significant operational impact due to parts obsolescence of the current weather radar. Equipment diminishing manufacturing source (DMS) issues will be resolved to support continued production and installation of requirements for the C-5 fleet. Further, DMS issues will be resolved to support continued operations through studies, bridge buys, life-of-type buys, development, and redesign efforts.

The current C-5 galley system suffers inoperability and leakage of liquid sodium hypochlorite causing severe corrosion and burnt wires in the landing gear control panels. A redesign will increase safety, mitigate risk, and reduce man-hours required to repair extensive damage.

The new CMC, weather radar replacement, and mission system equipment is programmed for completion on 52 C-5M aircraft.

In FY2013, Project Number 675358, C-5 Core Mission Computer, Weather Radar, and Mission Systems Equipment Program is a new start project.

FY 2013: Funding supports CMC design, development, formal qualification testing (FQT), weather radar integration, engineering change orders, and contractor test. Funding also supports redesign and proofing of C-5 mission systems equipment. Mission support funding is required for program office operations.

Exhibit R-2A, RDT&E Project Justification: PB 2013 Air Force		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0401119F: *C-5 Airlift Squadrons*	PROJECT 675358: *C-5 MISSION COMPUTER-MISSION SYS EQUIP-WEATHE*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2011	FY 2012	FY 2013
Title: Mission Computer, Mission Systems Equipment, and Weather Radar Program	-	-	35.115
Description: Core Mission Computer, Weather Radar, and Mission Systems Equipment, replacement will enable the C-5 to achieve wartime mission requirements by increasing fleet availability and capability (mission capable rate). ***FY 2013 Plans:*** The planned program funding in FY13 are to support core mission computer design, formal qualification testing (FQT), weather radar integration, development, engineering change orders, contractor test, and redesign of mission systems equipment. Mission support funding is required for program office operations.			
Accomplishments/Planned Programs Subtotals	-	-	35.115

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
• APAF, PE 0401119F, modifications: *C-5 Core Mission Computer/Weather Radar*	0.000	0.000	0.000	0.000	0.000	17.872	35.043	42.251	42.806	19.355	157.327

D. Acquisition Strategy

Core Mission Computer, Weather Radar, and Mission Systems Equipment programs: Engineering, manufacturing, and development (EMD) for the core mission computer and weather radar will be completed on three C-5M aircraft beginning in FY13. The acquisition strategy for this project will consider every opportunity to use commercial components to modernize the C-5 core mission computer and weather radar and maintain aircraft availability in support of mobility missions worldwide. The strategy is for the prime contractor to procure the core mission computer and weather radar, integrate and test those components, and install kits on three EMD aircraft. The synopsis has been completed, and there was no interest from sources other than the C-5 prime contractor. The contract method will be sole source. The contract type and fee has not been determined. The mission systems equipment redesign will require RDT&E funding for commercial off-the-shelf (COTS) proofing. A trade study for market availability of EMD of the mission systems equipment is in-progress, so the contract method and type has not been determined.

E. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

Exhibit R-4, RDT&E Schedule Profile: PB 2013 Air Force		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	**R-1 ITEM NOMENCLATURE** PE 0401119F: *C-5 Airlift Squadrons*	**PROJECT** 675358: *C-5 MISSION COMPUTER-MISSION SYS EQUIP-WEATHE*

Exhibit R-4A, RDT&E Schedule Details: PB 2013 Air Force		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	**R-1 ITEM NOMENCLATURE** PE 0401119F: *C-5 Airlift Squadrons*	**PROJECT** 675358: *C-5 MISSION COMPUTER-MISSION SYS EQUIP-WEATHE*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
Material Development Decision	1	2012	1	2012
Milestone B	1	2013	1	2013
Engineering, Manufacturing, and Development (EMD)	2	2013	1	2016
Annual Contract Awards	2	2013	4	2016
Preliminary Design Review	3	2013	3	2013
Critical Design Review	4	2013	4	2013
Training Development	3	2014	4	2015
Integrated Developmental/Operational Test and Evaluation	4	2014	1	2016
Milestone C	2	2015	2	2015